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IN THE CLAIMS:

1. (currently amended) An integrated power system constructed on a single chip, the integrated power system comprising:

at least one fuel cell built on the chip defining channels for gases to flow and a ~~voltage signal and defines~~outputting a voltage signal,

means for accepting fuel cell gases into the channels,

a power converter that accepts the voltage signal from the fuel cell and converts that voltage into a second output voltage suitable for use in electronic systems,

a fuel cell controller that regulates the gases flowing into and/or through the at least one fuel cell, wherein the gas flow corresponds to a power output of the at least one fuel cell,

means for detecting the power delivered via the second output voltage and providing a feedback signal corresponding thereto,

means for connecting the signal to the fuel cell controller, wherein the fuel cell controller is responsive to the feedback signal to meet the power delivered.

2. (original) The integrated power system of claim 1 further comprising means for measuring the temperature and pressure of the flowing gases and for communicating the measurements to the integrated power system.

3. (original) The integrated power system of claim 1 wherein the integrated power system defines two sides of the chip, the first side being where monolithic structures are built and interconnected and a second side of the chip defining the substrate, and further where the power converter comprises power transistors that deliver current via the second output voltage.

4. (original) The integrated power system of claim 3 wherein the power transistors are integrated into the chip and connections thereto are made on the first side of the chip.

5. (original) The integrated power system of claim 3 wherein the power transistors are integrated into the chip and connections thereto are made on both the first and the second sides of the chip.

6.(currently amended) The integrated power system of claim 1 wherein at least part of the power ~~converting~~converter, the fuel cell controller ~~conditioning and controlling functions~~ are constructed on at least one assembly defining first contact points, and wherein the chip defines contact points ~~corresponding~~ constructed to make electrical contact with the first contact points, such that the at least one assembly can be mounted onto the chip and electrical connections made between the chip and the at least one assembly.

7.(original) The integrated power system of claim 1 wherein the power converting functions comprises a switching mode type circuitry.